

# **“Total Energy” Study**

**Asa S. Hopkins**

**Public Service Department**

**VECAN Conference**

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# The Basics

- WHAT (the Legislature's ask):

*Analyze (and recommend) policies designed to achieve GHG and renewable energy goals:*

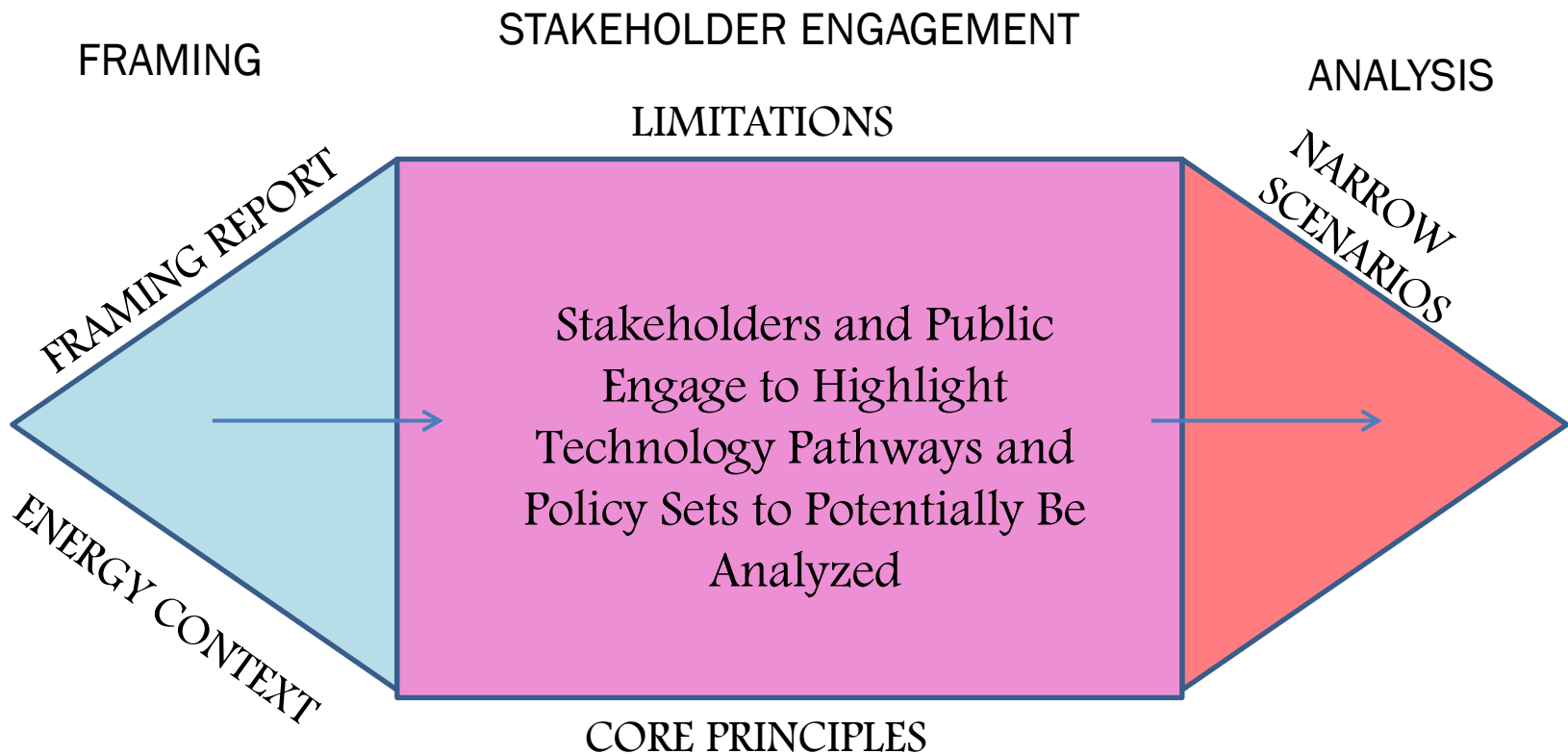
- *50% GHG reduction by 2028*
- *75% GHG reduction by 2050*
- *90% renewable energy by 2050*

This requires both *policy* and *technology* analysis.

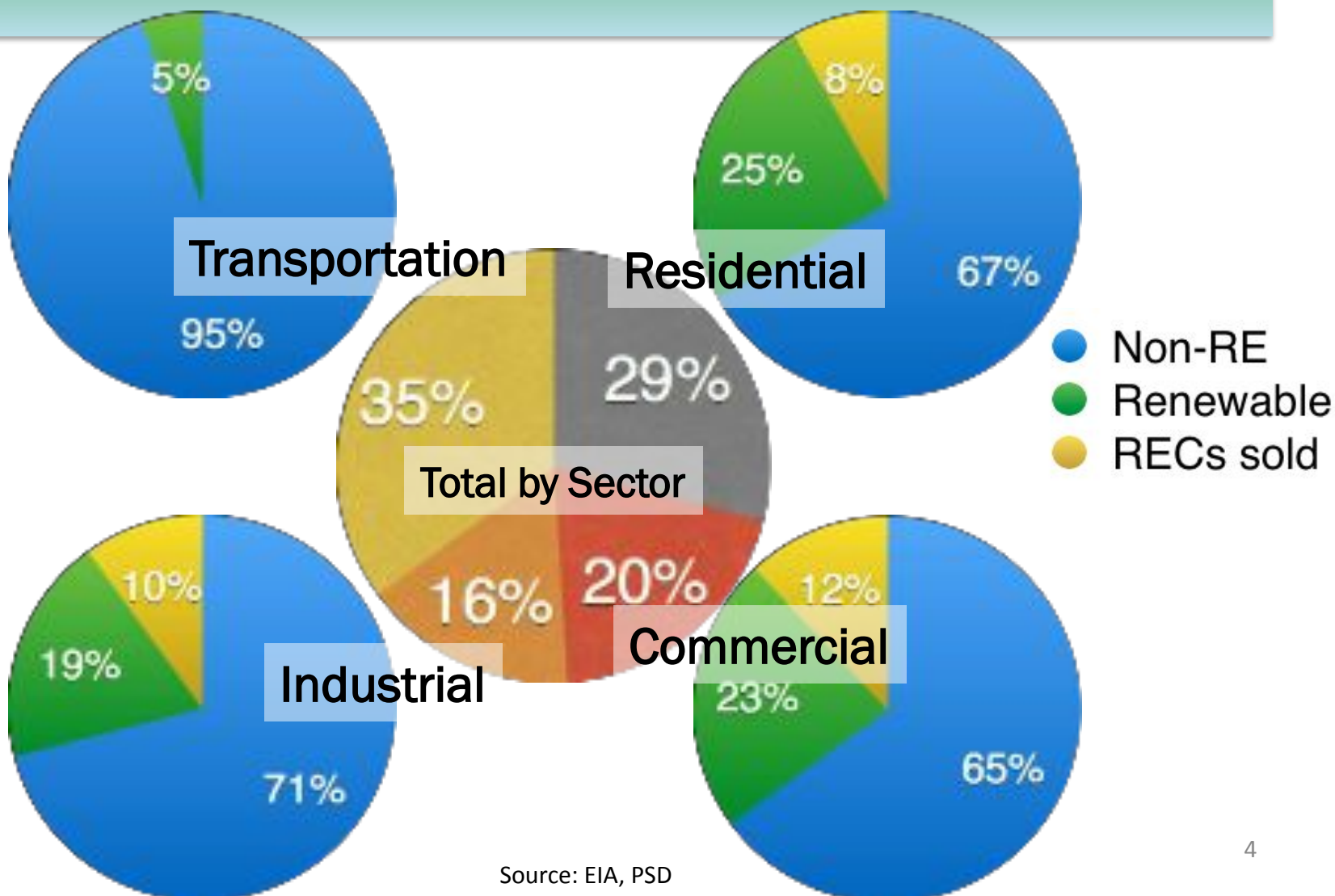
- WHO: Interagency, public, and stakeholder engagement are key

- WHEN: Report due to Legislature by December 15, 2013; Final process complete early summer 2014

# Project Plan



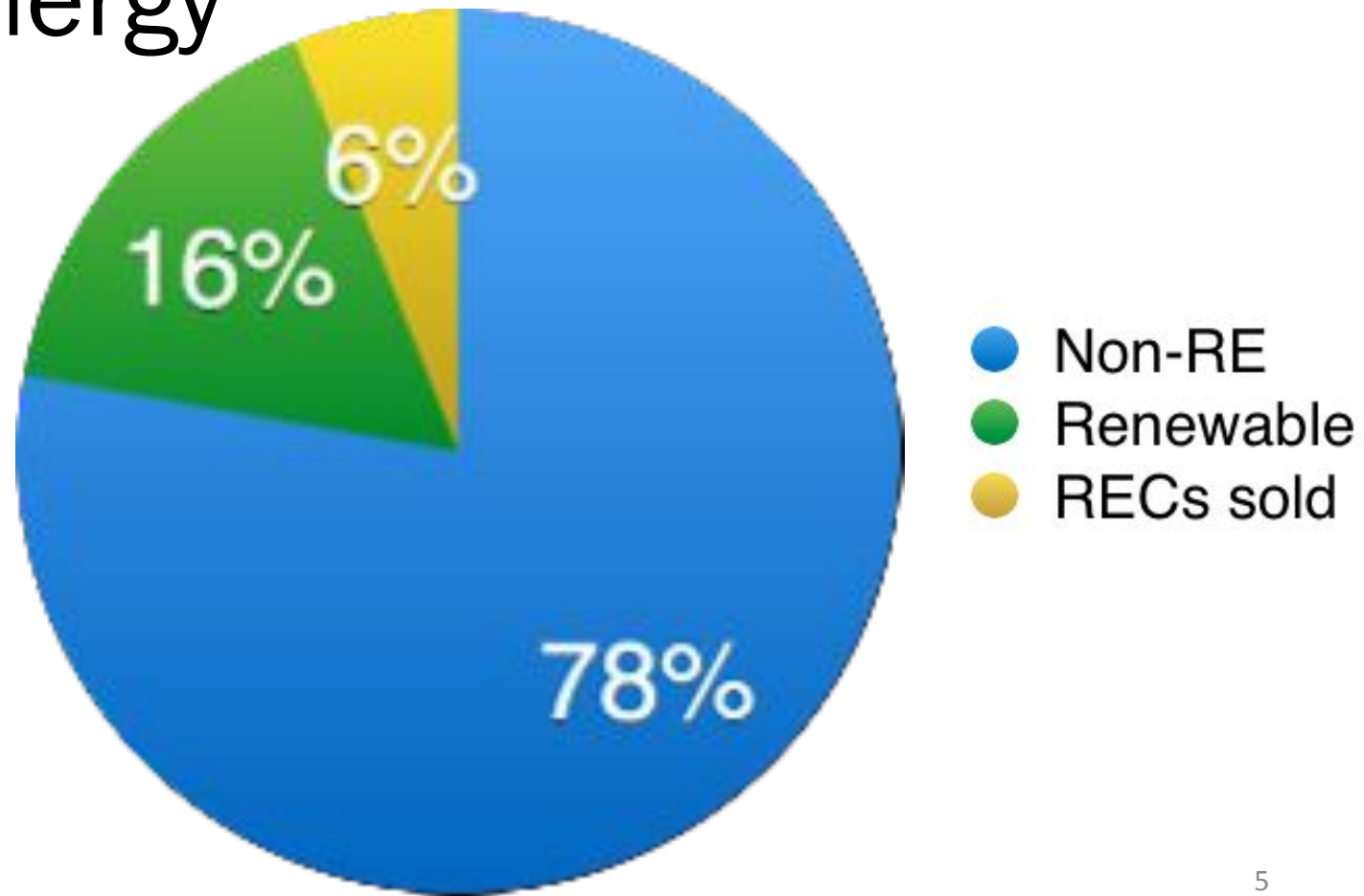
# Renewable Energy Use in VT



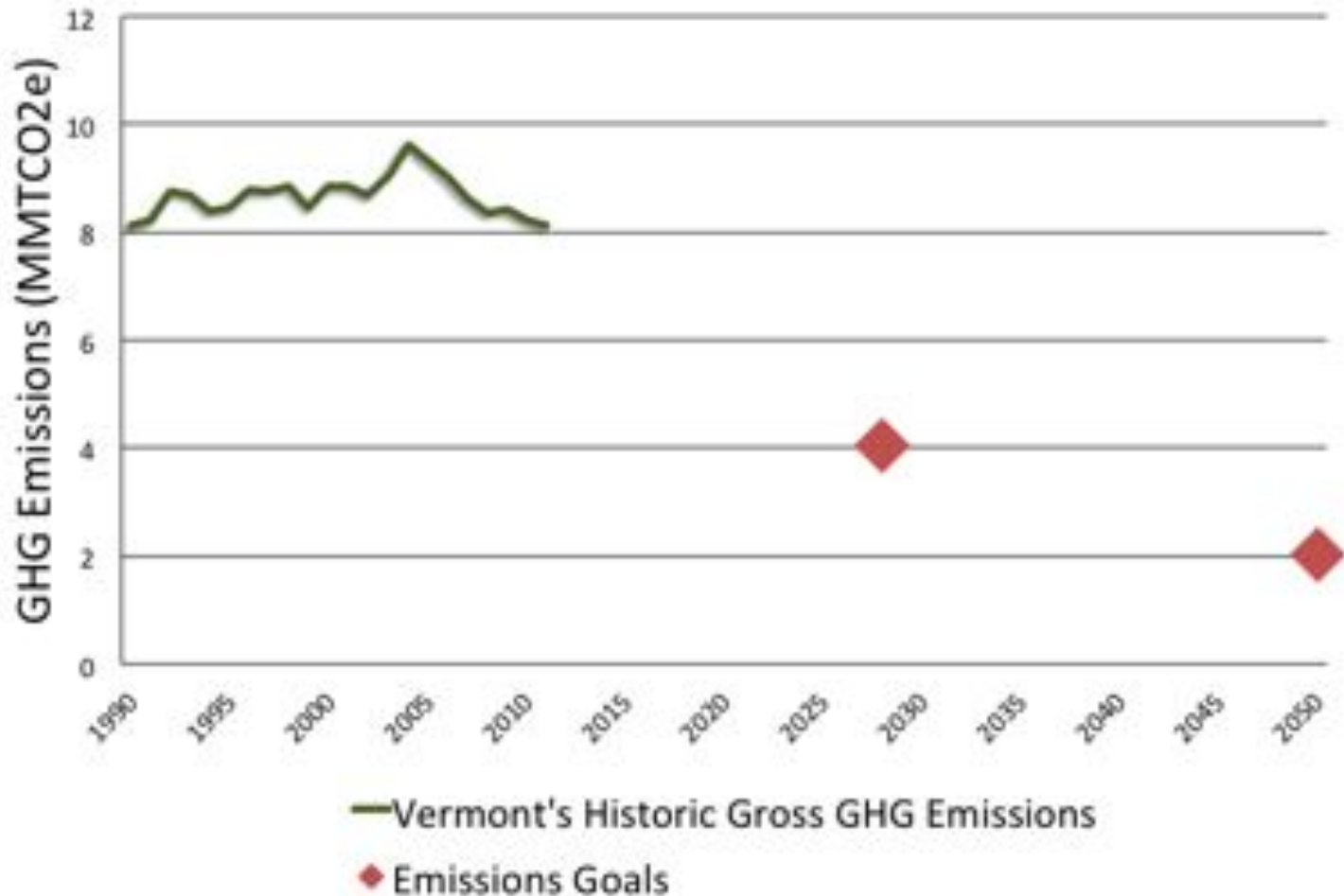
Source: EIA, PSD

# Renewable Energy Use in VT

## Total Energy



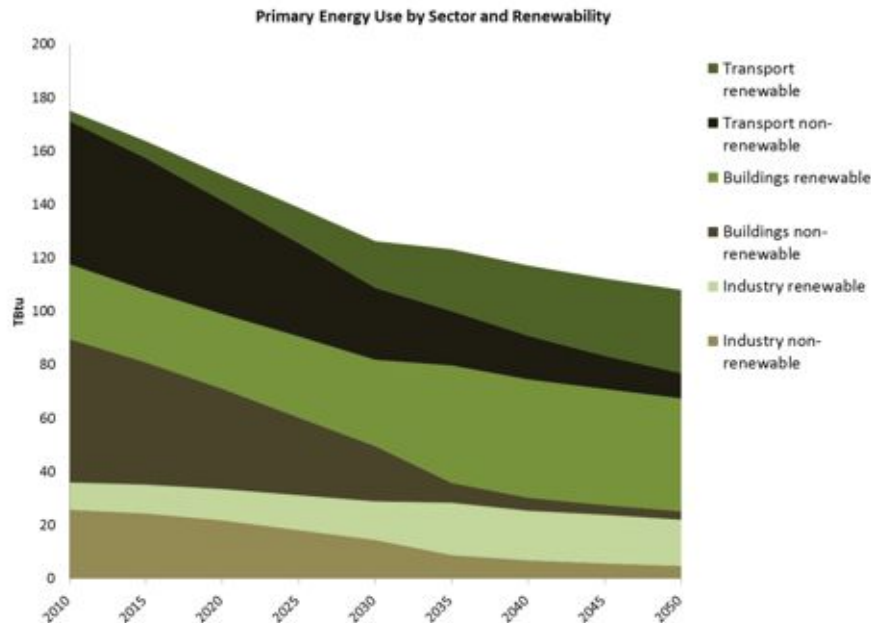
# Meeting the GHG reduction goals



# Policy Sets

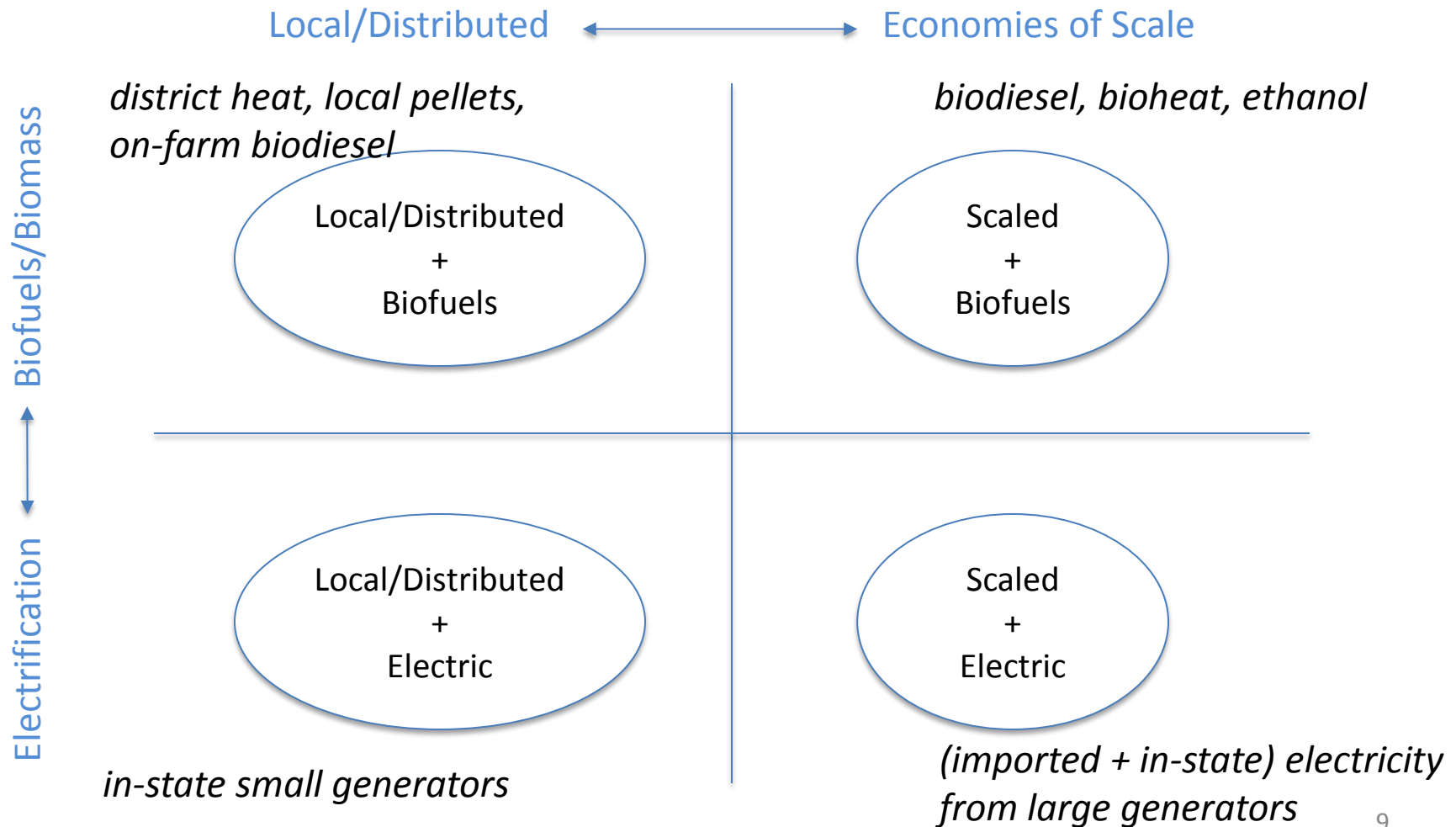
- 1) Nearly-Revenue-Neutral Carbon Tax Shift  
*“Tax bads not goods”*
- 2) Renewable Targets with Carbon Revenue  
*Establish a common structure, across all sectors/fuels, without mandates (at least to start); address market failures with some revenue from carbon tax*
- 3) Total Renewable Energy and Efficiency Standard (TREES)  
*Require all energy suppliers to get some fraction of their energy from renewable sources or efficiency, with tradable credits*
- 4) Sector-Specific Policies  
*Identify and implement policies that work best in each sector*
- 5) Regional Policy Focus  
*NE states all moving together*

# Efficiency and Conservation Are IMPERATIVE





# Supply Technology Directions



# Sectors

**Which technology directions do you think are most promising in each of these sectors?**

- Buildings
  - Urban/town/rural differences?
  - New vs. existing buildings?
- Transportation
  - Urban/town/rural differences?
- Electric Supply
  - In-state or out? Small or large?
  - Which technologies?

**What policy structures do you think would be most effective in making the promising paths you identify come to pass?**

# An example to start the discussion

- Buildings
  - Dense downtowns: biomass district heat (w/ CHP?)
  - Elsewhere: retrofit heat pumps w/ bioheat backup
  - New buildings: PassivHaus with electric HPs+DG (net zero)
- Transportation
  - Light duty to electricity; trucks to biodiesel
- Electric supply
  - Overall use +10% from today by 2050
  - 400 MW hydropower (imported and in-state)
  - 1 GW wind (in-state and out, including off-shore)
  - 400 MW solar
  - 100 MW biomass

# Thank you!

Please read the TES Legislative Report  
when it's available Dec. 16.  
Then send us your comments by January 22.

Email: [PSD.TotalEnergy@state.vt.us](mailto:PSD.TotalEnergy@state.vt.us)

View the project webpage at  
[http://www.publicservice.vermont.gov/publications/total\\_energy\\_study](http://www.publicservice.vermont.gov/publications/total_energy_study)

Asa Hopkins  
Asa.Hopkins@state.vt.us  
802-828-4082